Systems of Equations and Inequalities

Shared solutions, substitution, elimination, and intersection meaning.

Name _____ Date _____

32 main · 2-up grid · 12 pages · visible side quests

Completion Reward

Shown here as a small pack artifact, not a preview destination.

1. What does it mean if a system of two linear equations has no solution?

A. The lines intersect at the origin.
B. The lines never intersect.
C. The equations are identical.
D. Each equation has two answers by itself.

1.1. A system with no solution means:

A. the equations share one point
B. the graphs never meet
C. both equations are false
D. the system is nonlinear

1.2. A system with infinitely many solutions means:

A. the graphs are perpendicular
B. the graphs overlap completely
C. there are two answers only
D. both variables are 0

1.3. Which pair would give infinitely many solutions?

A. y = 2x + 1 and y = 2x - 3
B. y = 3x + 2 and 2y = 6x + 4
C. x + y = 4 and x - y = 4
D. y = x and y = -x

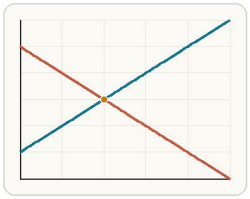
1.4. Which pair suggests no solution?

A. same slope, different intercepts
B. different slopes
C. same equation twice
D. one horizontal and one vertical

1.5. A linear system has exactly one solution when the lines:

A. are parallel
B. are the same line
C. intersect once
D. are both horizontal

2. What does a solution to a system of equations mean?



A solution to a system is an ordered pair that makes both equations true, so it must lie on both graphs at once.

A. Any point on either graph
B. A point that makes both equations true
C. The x-intercept of one line
D. The slope of the steeper line

2.1. A graph solution to a system is the point where the graphs:

A. have the same slope
B. intersect
C. cross the x-axis
D. have the same y-intercept

2.2. Which point solves both x + y = 6 and x - y = 2?

A. (4, 2)
B. (3, 3)
C. (2, 4)
D. (6, 0)

2.3. If two linear equations graph as the same line, the system has:

A. one solution
B. no solution
C. infinitely many solutions
D. only x-solutions

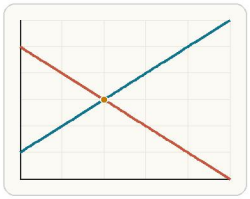
2.4. If two lines are parallel and distinct, the system has:

A. one solution
B. no solution
C. infinitely many solutions
D. two solutions

2.5. If a graph clearly shows the intersection at (2, 5), the system solution is:

A. x = 2 only
B. y = 5 only
C. (2, 5)
D. (5, 2)

3. Does (2, 3) solve the system y = x + 1 and x + y = 5?



Check the point against each graph or equation because one line alone is not enough for a system solution.

A. No
B. Only the first equation
C. Cannot tell
D. Yes

3.1. Does (3, 4) solve y = x + 1 and x + y = 7?

A. Yes
B. No
C. Only the first equation
D. Only the second equation

3.2. A system solution represents:

A. a point on both graphs
B. a slope shared by both lines
C. an x-intercept only
D. a graphing error

3.3. Why is (2, 5) not a solution to y = x + 1?

A. 2 + 5 = 7
B. 5 does not equal 2 + 1
C. the slope is wrong
D. the graph is vertical

3.4. When two lines cross once, the intersection gives:

A. the y-intercept
B. the one shared solution
C. parallel slopes
D. an impossible point

3.5. If two equations describe the same line, the system has:

A. no solution
B. one solution
C. infinitely many solutions
D. exactly two solutions

4. Which point satisfies both x >= 1 and y < 2?

A. (0, 1)
B. (1, 1)
C. (2, 3)
D. (1, 2)

4.1. In a system of inequalities, the feasible region is:

A. the overlap of the solution regions
B. the x-axis only
C. every graphed point
D. the slope line

4.2. A point is in the feasible region when:

A. it satisfies exactly one inequality
B. it satisfies both inequalities
C. it lies on the y-axis
D. its x-value is positive

4.3. A dashed boundary line means:

A. points on the line are included
B. points on the line are not included
C. the slope is 0
D. the region is impossible

4.4. A solid boundary line usually means:

A. boundary points are included
B. boundary points are excluded
C. the line is vertical only
D. the system has no solution

4.5. Which point satisfies y > x and y < 4?

A. (1, 1)
B. (2, 3)
C. (4, 5)
D. (3, 4)

5. Solve the system x = 5 and x + y = 9. Answer as an ordered pair.

5.1. For y = x + 2 and 3x + y = 14, what should replace y?

A. x
B. x + 2
C. 14
D. 3x

5.2. For y = 3x - 1 and x + y = 11, what is the best next step?

A. replace y with 3x - 1
B. add the equations
C. graph both lines first
D. divide both equations by x

5.3. Solve y = x + 1 and x + y = 7. What is x?

A. 2
B. 3
C. 4
D. 5

5.4. A student uses y = x + 2 in 3x + y = 14 but writes 3x + x = 14. What is wrong?

A. they forgot the +2
B. they should have multiplied
C. they needed elimination
D. they changed x

5.5. Solve x = 5 and x + y = 9. What is y?

A. 2
B. 3
C. 4
D. 5

6. In a system of inequalities, what is the feasible region?

A. Any point on either boundary line
B. Only the origin
C. The set of points that satisfy all inequalities at the same time
D. The steepest line in the system

6.1. In a system of inequalities, the feasible region is:

A. the overlap of the solution regions
B. the x-axis only
C. every graphed point
D. the slope line

6.2. A point is in the feasible region when:

A. it satisfies exactly one inequality
B. it satisfies both inequalities
C. it lies on the y-axis
D. its x-value is positive

6.3. A dashed boundary line means:

A. points on the line are included
B. points on the line are not included
C. the slope is 0
D. the region is impossible

6.4. A solid boundary line usually means:

A. boundary points are included
B. boundary points are excluded
C. the line is vertical only
D. the system has no solution

6.5. Which point satisfies $y > x$ and $y < 4$?

A. (1, 1)
B. (2, 3)
C. (4, 5)
D. (3, 4)

7. What kind of system is $2x + y = 5$ and $4x + 2y = 10$?

A. No solution
B. Infinitely many solutions
C. Exactly one solution
D. Not a system

7.1. A graph solution to a system is the point where the graphs:

A. have the same slope
B. intersect
C. cross the x-axis
D. have the same y-intercept

7.2. Which point solves both $x + y = 6$ and $x - y = 2$?

A. (4, 2)
B. (3, 3)
C. (2, 4)
D. (6, 0)

7.3. If two linear equations graph as the same line, the system has:

A. one solution
B. no solution
C. infinitely many solutions
D. only x-solutions

7.4. If two lines are parallel and distinct, the system has:

A. one solution
B. no solution
C. infinitely many solutions
D. two solutions

7.5. If a graph clearly shows the intersection at (2, 5), the system solution is:

A. x = 2 only
B. y = 5 only
C. (2, 5)
D. (5, 2)

8. Which system has infinitely many solutions?

A. $y = 2x + 3$ and $2y = 4x + 6$
B. $y = 2x + 3$ and $y = 2x - 1$
C. $x + y = 5$ and $x - y = 1$
D. $y = x$ and $y = -x$

8.1. A system with no solution means:

A. the equations share one point
B. the graphs never meet
C. both equations are false
D. the system is nonlinear

8.2. A system with infinitely many solutions means:

A. the graphs are perpendicular
B. the graphs overlap completely
C. there are two answers only
D. both variables are 0

8.3. Which pair would give infinitely many solutions?

A. $y = 2x + 1$ and $y = 2x - 3$
B. $y = 3x + 2$ and $2y = 6x + 4$
C. $x + y = 4$ and $x - y = 4$
D. $y = x$ and $y = -x$

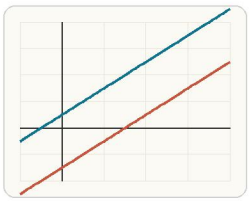
8.4. Which pair suggests no solution?

A. same slope, different intercepts
B. different slopes
C. same equation twice
D. one horizontal and one vertical

8.5. A linear system has exactly one solution when the lines:

A. are parallel
B. are the same line
C. intersect once
D. are both horizontal

9. What does it mean if two lines in a system never intersect?



If the lines never intersect, there is no ordered pair that satisfies both equations at once.

A. The system has infinitely many solutions
B. The system has exactly two solutions
C. The graph is not linear
D. The system has no solution

9.1. A system with no solution means:

A. the equations share one point
B. the graphs never meet
C. both equations are false
D. the system is nonlinear

9.2. A system with infinitely many solutions means:

A. the graphs are perpendicular
B. the graphs overlap completely
C. there are two answers only
D. both variables are 0

9.3. Which pair would give infinitely many solutions?

A. y = 2x + 1 and y = 2x - 3
B. y = 3x + 2 and 2y = 6x + 4
C. x + y = 4 and x - y = 4
D. y = x and y = -x

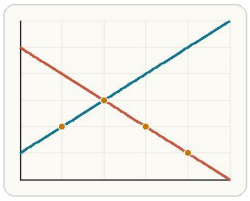
9.4. Which pair suggests no solution?

A. same slope, different intercepts
B. different slopes
C. same equation twice
D. one horizontal and one vertical

9.5. A linear system has exactly one solution when the lines:

A. are parallel
B. are the same line
C. intersect once
D. are both horizontal

10. Which labeled point is the solution to the graphed system?



On a graph, the system solution is the point where the two lines meet.

A. A
B. C
C. B
D. D

10.1. A graph solution to a system is the point where the graphs:

A. have the same slope
B. intersect
C. cross the x-axis
D. have the same y-intercept

10.2. Which point solves both x + y = 6 and x - y = 2?

A. (4, 2)
B. (3, 3)
C. (2, 4)
D. (6, 0)

10.3. If two linear equations graph as the same line, the system has:

A. one solution
B. no solution
C. infinitely many solutions
D. only x-solutions

10.4. If two lines are parallel and distinct, the system has:

A. one solution
B. no solution
C. infinitely many solutions
D. two solutions

10.5. If a graph clearly shows the intersection at (2, 5), the system solution is:

A. x = 2 only
B. y = 5 only
C. (2, 5)
D. (5, 2)

11. Which point satisfies both inequalities y > x and y < 4?

A. (3, 3)
B. (2, 3)
C. (4, 2)
D. (1, 5)

11.1. In a system of inequalities, the feasible region is:

A. the overlap of the solution regions
B. the x-axis only
C. every graphed point
D. the slope line

11.2. A point is in the feasible region when:

A. it satisfies exactly one inequality
B. it satisfies both inequalities
C. it lies on the y-axis
D. its x-value is positive

11.3. A dashed boundary line means:

A. points on the line are included
B. points on the line are not included
C. the slope is 0
D. the region is impossible

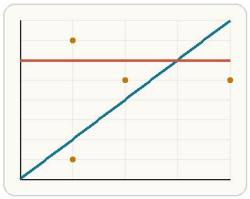
11.4. A solid boundary line usually means:

A. boundary points are included
B. boundary points are excluded
C. the line is vertical only
D. the system has no solution

11.5. Which point satisfies y > x and y < 4?

A. (1, 1)
B. (2, 3)
C. (4, 5)
D. (3, 4)

12. Which labeled point satisfies both inequalities?



The feasible points are on or above y = 2x and on or below y = 6.

A. A
B. C
C. D
D. B

12.1. In a system of inequalities, the feasible region is:

A. the overlap of the solution regions
B. the x-axis only
C. every graphed point
D. the slope line

12.2. A point is in the feasible region when:

A. it satisfies exactly one inequality
B. it satisfies both inequalities
C. it lies on the y-axis
D. its x-value is positive

12.3. A dashed boundary line means:

A. points on the line are included
B. points on the line are not included
C. the slope is 0
D. the region is impossible

12.4. A solid boundary line usually means:

A. boundary points are included
B. boundary points are excluded
C. the line is vertical only
D. the system has no solution

12.5. Which point satisfies y > x and y < 4?

A. (1, 1)
B. (2, 3)
C. (4, 5)
D. (3, 4)

13. For the system y = x + 1 and 2x + y = 11, what is the best next step?

A. Add the equations together immediately.
B. Multiply both equations by -1.
C. Subtract x from both equations.
D. Substitute x + 1 for y in 2x + y = 11.

13.1. For y = x + 2 and 3x + y = 14, what should replace y?

A. x
B. x + 2
C. 14
D. 3x

13.2. For y = 3x - 1 and x + y = 11, what is the best next step?

A. replace y with 3x - 1
B. add the equations
C. graph both lines first
D. divide both equations by x

13.3. Solve y = x + 1 and x + y = 7. What is x?

A. 2
B. 3
C. 4
D. 5

13.4. A student uses y = x + 2 in 3x + y = 14 but writes 3x + x = 14. What is wrong?

A. they forgot the +2
B. they should have multiplied
C. they needed elimination
D. they changed x

13.5. Solve x = 5 and x + y = 9. What is y?

A. 2
B. 3
C. 4
D. 5

14. What is the best next step to use elimination on 2x + y = 7 and 3x - y = 8?

A. Subtract the first equation from the second to eliminate x
B. Multiply both equations by x
C. Add the equations to eliminate y
D. Graph the system because elimination cannot be used

14.1. What is the best next step for 2x + y = 7 and 3x - y = 8?

A. add the equations
B. subtract the equations
C. solve for y first
D. multiply everything by 0

14.2. Solve x + y = 9 and x - y = 1. What is x?

A. 3
B. 4
C. 5
D. 6

14.3. Why do y-terms not cancel when subtracting x + y = 8 from x - y = 2?

A. because subtraction changes both signs
B. because x must cancel first
C. because y can never cancel
D. because one equation is nonlinear

14.4. Elimination is easiest when one variable has coefficients:

A. 0 and 0
B. the same or opposites
C. both negative only
D. both fractions only

14.5. Solve x + 2y = 8 and x - y = 2. What is y?

A. 1
B. 2
C. 3
D. 4

15. A student uses y = x + 2 in the system y = x + 2 and 3x + y = 14, but writes 3x + x = 14. What is wrong?

A. They should have multiplied x by y instead.
B. They forgot to substitute the entire expression x + 2 for y.
C. Substitution never works for linear systems.
D. They should have deleted the 3x term.

15.1. For y = x + 2 and 3x + y = 14, what should replace y?

A. x
B. x + 2
C. 14
D. 3x

15.2. For y = 3x - 1 and x + y = 11, what is the best next step?

A. replace y with 3x - 1
B. add the equations
C. graph both lines first
D. divide both equations by x

15.3. Solve y = x + 1 and x + y = 7. What is x?

A. 2
B. 3
C. 4
D. 5

15.4. A student uses y = x + 2 in 3x + y = 14 but writes 3x + x = 14. What is wrong?

A. they forgot the +2
B. they should have multiplied
C. they needed elimination
D. they changed x

15.5. Solve x = 5 and x + y = 9. What is y?

A. 2
B. 3
C. 4
D. 5

16. A student subtracts x + y = 8 from x - y = 2 and says the y-terms cancel. What is wrong?

A. Subtracting gives -2y, not 0, because -y - y = -2y.
B. The x-terms should never cancel.
C. Systems cannot be solved by subtraction.
D. The answer should always be y = 0.

16.1. What is the best next step for 2x + y = 7 and 3x - y = 8?

A. add the equations
B. subtract the equations
C. solve for y first
D. multiply everything by 0

16.2. Solve x + y = 9 and x - y = 1. What is x?

A. 3
B. 4
C. 5
D. 6

16.3. Why do y-terms not cancel when subtracting x + y = 8 from x - y = 2?

A. because subtraction changes both signs
B. because x must cancel first
C. because y can never cancel
D. because one equation is nonlinear

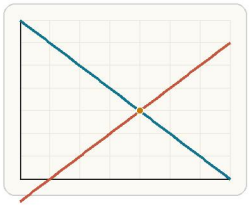
16.4. Elimination is easiest when one variable has coefficients:

A. 0 and 0
B. the same or opposites
C. both negative only
D. both fractions only

16.5. Solve x + 2y = 8 and x - y = 2. What is y?

A. 1
B. 2
C. 3
D. 4

17. A student adds x + y = 7 and x - y = 1 and gets y = 8. What is wrong?



The y-terms cancel because they are opposites.

A. The y terms should cancel, leaving 2x = 8.
B. The x terms should cancel, leaving 2y = 8.
C. You cannot add equations.
D. There is no mistake.

17.1. For x + y = 8 and x - y = 2, what happens when you add the equations?

A. x is eliminated
B. y is eliminated
C. both variables are eliminated
D. nothing useful happens

17.2. For x + y = 8 and x + 2y = 11, what is a useful first move?

A. subtract the first equation from the second
B. multiply both by 0
C. graph immediately
D. divide both by y

17.3. For 2x + y = 7 and x - y = 2, what is a strong first step?

A. multiply the second equation by 2
B. multiply the first equation by y
C. divide both by x
D. replace x with 0

17.4. If x + y = 9 and x - y = 5, what is y?

A. 1
B. 2
C. 3
D. 4

17.5. Why is it important to watch signs in elimination?

A. A sign error can stop terms from canceling correctly
B. Signs matter only in graphing
C. Signs never affect systems
D. Signs matter only for x

18. Solve the system x + y = 20 and x - y = 4.

A. (12, 8)
B. (8, 12)
C. (10, 10)
D. (24, 4)

18.1. For x + y = 8 and x - y = 2, what happens when you add the equations?

A. x is eliminated
B. y is eliminated
C. both variables are eliminated
D. nothing useful happens

18.2. For x + y = 8 and x + 2y = 11, what is a useful first move?

A. subtract the first equation from the second
B. multiply both by 0
C. graph immediately
D. divide both by y

18.3. For 2x + y = 7 and x - y = 2, what is a strong first step?

A. multiply the second equation by 2
B. multiply the first equation by y
C. divide both by x
D. replace x with 0

18.4. If x + y = 9 and x - y = 5, what is y?

A. 1
B. 2
C. 3
D. 4

18.5. Why is it important to watch signs in elimination?

A. A sign error can stop terms from canceling correctly
B. Signs matter only in graphing
C. Signs never affect systems
D. Signs matter only for x

19. Solve the system 2x + y = 7 and x + y = 5. Answer as an ordered pair.

19.1. What is the best next step for 2x + y = 7 and 3x - y = 8?

A. add the equations
B. subtract the equations
C. solve for y first
D. multiply everything by 0

19.2. Solve x + y = 9 and x - y = 1. What is x?

A. 3
B. 4
C. 5
D. 6

19.3. Why do y-terms not cancel when subtracting x + y = 8 from x - y = 2?

A. because subtraction changes both signs
B. because x must cancel first
C. because y can never cancel
D. because one equation is nonlinear

19.4. Elimination is easiest when one variable has coefficients:

A. 0 and 0
B. the same or opposites
C. both negative only
D. both fractions only

19.5. Solve x + 2y = 8 and x - y = 2. What is y?

A. 1
B. 2
C. 3
D. 4

20. Solve the system y = 3x - 2 and y = x + 4. Answer as an ordered pair.

20.1. For y = x + 2 and 3x + y = 14, what should replace y?

A. x
B. x + 2
C. 14
D. 3x

20.2. For y = 3x - 1 and x + y = 11, what is the best next step?

A. replace y with 3x - 1
B. add the equations
C. graph both lines first
D. divide both equations by x

20.3. Solve y = x + 1 and x + y = 7. What is x?

A. 2
B. 3
C. 4
D. 5

20.4. A student uses y = x + 2 in 3x + y = 14 but writes 3x + x = 14. What is wrong?

A. they forgot the +2
B. they should have multiplied
C. they needed elimination
D. they changed x

20.5. Solve x = 5 and x + y = 9. What is y?

A. 2
B. 3
C. 4
D. 5

21. Solve the system x + y = 9 and x - y = 1. Answer as an ordered pair.

21.1. What is the best next step for 2x + y = 7 and 3x - y = 8?

A. add the equations
B. subtract the equations
C. solve for y first
D. multiply everything by 0

21.2. Solve x + y = 9 and x - y = 1. What is x?

A. 3
B. 4
C. 5
D. 6

21.3. Why do y-terms not cancel when subtracting x + y = 8 from x - y = 2?

A. because subtraction changes both signs
B. because x must cancel first
C. because y can never cancel
D. because one equation is nonlinear

21.4. Elimination is easiest when one variable has coefficients:

A. 0 and 0
B. the same or opposites
C. both negative only
D. both fractions only

21.5. Solve x + 2y = 8 and x - y = 2. What is y?

A. 1
B. 2
C. 3
D. 4

22. Solve the system 2x + y = 11 and x - y = 1. Answer as an ordered pair.

22.1. For y = x + 2 and 3x + y = 14, what should replace y?

A. x
B. x + 2
C. 14
D. 3x

22.2. For y = 3x - 1 and x + y = 11, what is the best next step?

A. replace y with 3x - 1
B. add the equations
C. graph both lines first
D. divide both equations by x

22.3. Solve y = x + 1 and x + y = 7. What is x?

A. 2
B. 3
C. 4
D. 5

22.4. A student uses y = x + 2 in 3x + y = 14 but writes 3x + x = 14. What is wrong?

A. they forgot the +2
B. they should have multiplied
C. they needed elimination
D. they changed x

22.5. Solve x = 5 and x + y = 9. What is y?

A. 2
B. 3
C. 4
D. 5

23. Solve the system x + 2y = 8 and x - y = 2. Answer as an ordered pair.

23.1. What is the best next step for 2x + y = 7 and 3x - y = 8?

A. add the equations
B. subtract the equations
C. solve for y first
D. multiply everything by 0

23.2. Solve x + y = 9 and x - y = 1. What is x?

A. 3
B. 4
C. 5
D. 6

23.3. Why do y-terms not cancel when subtracting x + y = 8 from x - y = 2?

A. because subtraction changes both signs
B. because x must cancel first
C. because y can never cancel
D. because one equation is nonlinear

23.4. Elimination is easiest when one variable has coefficients:

A. 0 and 0
B. the same or opposites
C. both negative only
D. both fractions only

23.5. Solve x + 2y = 8 and x - y = 2. What is y?

A. 1
B. 2
C. 3
D. 4

24. Solve the system y = x + 2 and y = 5. Answer as an ordered pair.

24.1. For y = x + 2 and 3x + y = 14, what should replace y?

A. x
B. x + 2
C. 14
D. 3x

24.2. For y = 3x - 1 and x + y = 11, what is the best next step?

A. replace y with 3x - 1
B. add the equations
C. graph both lines first
D. divide both equations by x

24.3. Solve y = x + 1 and x + y = 7. What is x?

A. 2
B. 3
C. 4
D. 5

24.4. A student uses y = x + 2 in 3x + y = 14 but writes 3x + x = 14. What is wrong?

A. they forgot the +2
B. they should have multiplied
C. they needed elimination
D. they changed x

24.5. Solve x = 5 and x + y = 9. What is y?

A. 2
B. 3
C. 4
D. 5

25. Which method is most natural for the system y = 3x - 2 and 2x + y = 9?

A. Elimination only
B. Graphing only
C. Substitution
D. No method works

25.1. For y = 2x + 1 and 3x + y = 13, which method is more natural to start with?

A. substitution
B. elimination
C. graphing only
D. factoring

25.2. For x + y = 9 and x - y = 1, which method is more natural to start with?

A. substitution
B. elimination
C. graphing only
D. factoring

25.3. Substitution is often a good choice when:

A. a variable is already isolated
B. both equations have matching coefficients
C. the lines are parallel
D. the variables are negative

25.4. Elimination is often a good choice when:

A. one equation is already solved for y
B. matching coefficients can cancel a variable
C. there is only one variable
D. the graph is curved

25.5. Which clue points more strongly to elimination?

A. y = 3x - 2
B. 2x + y = 7 and 2x - y = 1
C. one variable name
D. a table

26. For the system y = 4x - 1 and 2x + y = 14, which method is more natural to start with?

A. Elimination by adding immediately
B. Substitution
C. Graphing only
D. Factoring

26.1. For y = 2x + 1 and 3x + y = 13, which method is more natural to start with?

A. substitution
B. elimination
C. graphing only
D. factoring

26.2. For x + y = 9 and x - y = 1, which method is more natural to start with?

A. substitution
B. elimination
C. graphing only
D. factoring

26.3. Substitution is often a good choice when:

A. a variable is already isolated
B. both equations have matching coefficients
C. the lines are parallel
D. the variables are negative

26.4. Elimination is often a good choice when:

A. one equation is already solved for y
B. matching coefficients can cancel a variable
C. there is only one variable
D. the graph is curved

26.5. Which clue points more strongly to elimination?

A. y = 3x - 2
B. 2x + y = 7 and 2x - y = 1
C. one variable name
D. a table

27. For y = 2x + 1 and 3x + y = 13, which method is more natural to start with?

Substitution is natural when one line is already isolated.

A. Elimination, because no variable is isolated
B. Graphing is the only exact method
C. No method works here
D. Substitution, because y is already isolated

27.1. For y = 2x + 1 and 3x + y = 13, which method is more natural to start with?

A. substitution
B. elimination
C. graphing only
D. factoring

27.2. For x + y = 9 and x - y = 1, which method is more natural to start with?

A. substitution
B. elimination
C. graphing only
D. factoring

27.3. Substitution is often a good choice when:

A. a variable is already isolated
B. both equations have matching coefficients
C. the lines are parallel
D. the variables are negative

27.4. Elimination is often a good choice when:

A. one equation is already solved for y
B. matching coefficients can cancel a variable
C. there is only one variable
D. the graph is curved

27.5. Which clue points more strongly to elimination?

A. y = 3x - 2
B. 2x + y = 7 and 2x - y = 1
C. one variable name
D. a table

28. What is the best next step for eliminating a variable in 3x + 2y = 12 and 3x - y = 3?

A. Divide the first equation by 3.
B. Add the equations immediately.
C. Switch x and y in the second equation.
D. Multiply the second equation by 2.

28.1. What is the best next step for 2x + y = 7 and 3x - y = 8?

A. add the equations
B. subtract the equations
C. solve for y first
D. multiply everything by 0

28.2. Solve x + y = 9 and x - y = 1. What is x?

A. 3
B. 4
C. 5
D. 6

28.3. Why do y-terms not cancel when subtracting x + y = 8 from x - y = 2?

A. because subtraction changes both signs
B. because x must cancel first
C. because y can never cancel
D. because one equation is nonlinear

28.4. Elimination is easiest when one variable has coefficients:

A. 0 and 0
B. the same or opposites
C. both negative only
D. both fractions only

28.5. Solve x + 2y = 8 and x - y = 2. What is y?

A. 1
B. 2
C. 3
D. 4

29. Solve the system y = 2x - 1 and x + y = 11.

A. (4, 7)
B. (3, 5)
C. (2, 3)
D. (5, 9)

29.1. If y = x + 2 and 2x + y = 11, what should replace y?

A. x + 2
B. 2x + 11
C. 11 - x
D. 2

29.2. If y = 2x and x + y = 9, what is x?

A. 2
B. 3
C. 4
D. 6

29.3. If y = x - 1 and x + y = 7, what is y?

A. 2
B. 3
C. 4
D. 6

29.4. Which system is easiest for substitution?

A. y = 3x - 2 and x + y = 5
B. 2x + 4y = 8 and 3x + 5y = 11
C. x + y = 7 and x - y = 3
D. 4x + y = 9 and 4x - y = 1

29.5. If x = 2 and y = x + 5, then y = ?

A. 3
B. 5
C. 7
D. 10

30. Solve the system x + y = 7 and x - y = 1. Answer as an ordered pair.

30.1. For x + y = 8 and x - y = 2, what happens when you add the equations?

A. x is eliminated
B. y is eliminated
C. both variables are eliminated
D. nothing useful happens

30.2. For x + y = 8 and x + 2y = 11, what is a useful first move?

A. subtract the first equation from the second
B. multiply both by 0
C. graph immediately
D. divide both by y

30.3. For 2x + y = 7 and x - y = 2, what is a strong first step?

A. multiply the second equation by 2
B. multiply the first equation by y
C. divide both by x
D. replace x with 0

30.4. If x + y = 9 and x - y = 5, what is y?

A. 1
B. 2
C. 3
D. 4

30.5. Why is it important to watch signs in elimination?

A. A sign error can stop terms from canceling correctly
B. Signs matter only in graphing
C. Signs never affect systems
D. Signs matter only for x

31. A club sold 14 tickets total. Adult tickets cost $8 and student tickets cost $5 for a total of $91. How many adult tickets were sold? Answer with a number.

31.1. A group buys 12 tickets total, with adult tickets a and student tickets s. Which equation matches?

A. a + s = 12
B. 10a + 6s = 12
C. a - s = 12
D. 12a + s = 0

31.2. Adult tickets cost $8 and student tickets cost $5 for a total of $91. Which equation matches the cost?

A. a + s = 91
B. 8a + 5s = 91
C. 13a = 91
D. 8a - 5s = 91

31.3. If a represents adult tickets, what does a = 7 mean?

A. 7 student tickets
B. 7 adult tickets
C. $7 total
D. 7 rows

31.4. If the solution to the ticket system is (6, 8) in the order (a, s), what does it mean?

A. 6 adults and 8 students
B. 8 adults and 6 students
C. $6 adults and $8 students
D. 14 tickets each

31.5. After solving a ticket system, what should you do next?

A. verify the pair satisfies both equations
B. change the variable names
C. force the bigger number first
D. round to the nearest ten

32. Adult tickets cost $10 and student tickets cost $6. A group buys 12 tickets for $96 total. Let a be adult tickets and s be student tickets. Write the system as two equations.

32.1. A group buys 12 tickets total, with adult tickets a and student tickets s. Which equation matches?

A. a + s = 12
B. 10a + 6s = 12
C. a - s = 12
D. 12a + s = 0

32.2. Adult tickets cost $8 and student tickets cost $5 for a total of $91. Which equation matches the cost?

A. a + s = 91
B. 8a + 5s = 91
C. 13a = 91
D. 8a - 5s = 91

32.3. If a represents adult tickets, what does a = 7 mean?

A. 7 student tickets
B. 7 adult tickets
C. $7 total
D. 7 rows

32.4. If the solution to the ticket system is (6, 8) in the order (a, s), what does it mean?

A. 6 adults and 8 students
B. 8 adults and 6 students
C. $6 adults and $8 students
D. 14 tickets each

32.5. After solving a ticket system, what should you do next?

A. verify the pair satisfies both equations
B. change the variable names
C. force the bigger number first
D. round to the nearest ten